

Rusi,

In all of your uses of CR-39, Darpa March 1, Tessien, Bugg, Forringer, were the detectors outside of glass flask or inside the solution?

My question pertains to the isolation of alpha emission.

Thanks,

Steve

Date: Tue, 22 May 2007 19:05:54 -0400
From: "Rusi P. Taleyarkhan" <rusi@ecn.purdue.edu>
To: Steve Krivit
Subject: Re: cr-39 Explanation (rpt->steveK;5.22.07)

Steve:

Of-course, on the Outside surface for our expts. A rigorous protocol was developed and consistently followed. The outside surface is first cleaned with acetone swab, then a layer of plastic tape is placed over which the CR-39 is placed and then covered again with tape. The CR-39 already comes with a 80micron thick plastic covering plastic sheet that is also left on during mounting. This is done for two diametrically opposite faces. A third CR-39 is placed about a meter away on a table with similar covering to ensure we follow the same protocol for background change monitoring as that for the detectors mounted on the outside of the test cell.

Only those detectors mounted on reactors with deuterated benzene-C₂Cl₄-D-Acetone and only when cavitation is on provided us with 8 to 14 SD increases in neutron counts. Expts. without cavitation but deuterated fluids gave null results. Detectors placed a meter away recorded no change. Detectors for all control expts (i.e., with H-bearing fluid) gave null results. Finally, expts. with heavy water (D₂O) even with cavitation also gave null results - something that was predicted by Nigmatulin/Lahey et al. theory.

The CR-39 from Landauer were calibrated per advice from Bob Fleishcher's advice and after confirming efficiency for detection of fast neutrons vs his measured published values. Calibration was done using a NIST certified neutron source.

Rusi